# DRAFT PERFORMANCE BANDS

## SOFTWARE DESIGN AND DEVELOPMENT

The typical performance in this band:

<table>
<thead>
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<th>Band</th>
<th>Example Performance</th>
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| **Band 6** | - designs a complex computer-based solution to a problem reflecting an extensive knowledge of the interrelationship between hardware and software  
- designs solutions to a variety of complex, unfamiliar problems as algorithms using correct control structures and appropriate data structures  
- analyses a problem and designs comprehensive software solutions using appropriate development methodologies and project management techniques  
- displays expertise in implementing the phases of the software development cycle to produce a solution relevant to users' needs and concerns  
- demonstrates sophisticated communication skills both in designing and documenting a software solution to a specified problem, and in recognising and addressing users' needs and concerns  
- critically evaluates the effects on society of the use of computer-based solutions, and produces solutions which reflect these values  
- demonstrates an extensive knowledge of the tools used to manage and represent complex software solutions  
- demonstrates an extensive understanding of the terminology used in software design and development  
- applies extensive knowledge and understanding of historical developments to current and emerging technologies and practices |
| **Band 5** | - designs a thorough computer-based solution to a problem, reflecting a detailed knowledge of the interrelationship between hardware and software  
- designs solutions to a specified problem as detailed algorithms using correct control structures and appropriate data structures  
- analyses a problem and designs detailed software solutions using appropriate development methodologies, utilising some project management techniques  
- successfully implements the phases of the software development cycle to produce a software solution relevant to users' needs and concerns  
- demonstrates accomplished communication skills both in designing and documenting a software solution to a specified problem and in recognising users' needs and concerns  
- makes informed judgments about the effects on society of computer-based software solutions  
- demonstrates knowledge of the tools used to manage and represent complex software solutions  
- expresses ideas that demonstrate an understanding of the terminology used in software design and development  
- relates knowledge and understanding of historical developments to current and emerging technologies and practices |
| **Band 4** | - designs a computer-based solution to a problem reflecting knowledge of the interrelationship between hardware and software  
- designs a solution to a specified problem as an algorithm showing some understanding of control structures and data structures  
- analyses a problem and designs clear software solutions using appropriate development methodologies, recognising the need for project management  
- adequately outlines the phases of the software development cycle required to produce a solution to a specified problem  
- demonstrates good communication skills in documenting a software solution to a specified problem and explaining the system to users  
- gives clear explanations of the impact on society of computer-based software solutions  
- recognises and describes a broad variety of the tools used to represent software solutions  
- writes adequate definitions of the terminology used in software design and development  
- demonstrates knowledge and understanding of historical developments and current and emerging technologies |
| **Band 3** | - modifies an existing computer-based solution to a problem reflecting basic knowledge of the interrelationship between hardware and software  
- reads, interprets and writes basic algorithms which use a variety of data structures  
- understands a problem and modifies an existing design of a software solution  
- has a basic understanding of the phases of the software development cycle  
- demonstrates communication skills in documenting a software solution to a basic problem and communicating this to users  
- describes the impact on society of computer-based software solutions  
- recognises most of the tools used to represent software solutions  
- has a knowledge of basic terminology used in software design and development  
- shows some knowledge of historical developments and current and emerging technologies |
| **Band 2** | - describes the hardware and software of a given computer system  
- reads and interprets simple algorithms which use basic control structures and unstructured data types  
- names the phases of the software development cycle  
- demonstrates limited communication skills in attempting to document a software solution to a simple problem  
- identifies the issues related to the impact on society of computer-based software solutions  
- provides basic definitions for some common terms used in software design and development  
- recounts isolated historical developments and recognizes current technologies |
| **Band 1** | - describes the hardware and software of a given computer system  
- reads and interprets simple algorithms which use basic control structures and unstructured data types  
- names the phases of the software development cycle  
- demonstrates limited communication skills in attempting to document a software solution to a simple problem  
- identifies the issues related to the impact on society of computer-based software solutions  
- provides basic definitions for some common terms used in software design and development  
- recounts isolated historical developments and recognizes current technologies |